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SURFACE SYSTEMS & INSTRUMENTS, LLC
 Custom Test Equipment • Mobile Technology Solutions

www.smoothroad.com

3D MACHINE CONTROL



One Control Unit Supports Multiple Machines

3D Control of Subsurface Preparation

GPS/RTK System Controls Paver Movement

Precise Control of Construction Equipment With High Resolution GPS & Profile Data
 Works on Graders, Dozers, Pavers, Trimmers, Profilers, Milling and Grinding Machines



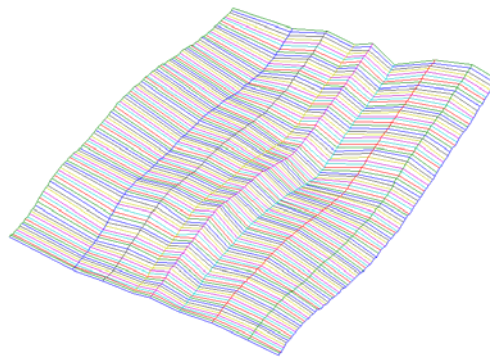
- Parameter Driven Software Allows Precision Control of Equipment through GPS, Laser/Ultrasonic, or Both
 - Quick-Disconnect Hardware for Use of Systems on Multiple Machines Using Same Project Data
 - Optional Vehicular Use of System as Mobile Surveying Tool

HARDWARE FEATURES*	SOFTWARE FEATURES*
<ul style="list-style-type: none"> Machine control systems allow construction of surface from agency design specification or from parameter driven design using 3D data from SSI mobile survey and profiling system. (See: www.smoothroad.com). Dual high frequency GPS system with mobile GPS unit and static RTK (Real Time Kinematics) GPS unit with differential corrections. 	<ul style="list-style-type: none"> Parameter driven software enables precision machine control for wedge course, binder course, and top course. Control equipment through GPS only or GPS & laser controls. Easy to use, cross-section based software. One setup for multiple passes, slopes, and lanes. Large memory—load the entire job plan.
<ul style="list-style-type: none"> Versatile and easy to use (Load digital plans in computer, set up RTK relay tower off cut, verify mobile receiver's position on cut). Setup the base anywhere—no monument required. Guide from the plans, or mix grade, slope, or line. Eliminates need for grade "stakes and hubs." Work from plans without string lines. From start to finish, typical setup is 1 -2 hours. 	<ul style="list-style-type: none"> Allows multiple control points for line, grade, slope, super-elevations, and cross-section with single setup. Provides cross-sectional data through super-elevations from anywhere; records "As Built" data for plan modification and quantity verification Allows cross-section visual from anywhere. Whole job, including ditches, ramps, bridge approaches, and medians fits in one data file, which downloads to CAD software.
<ul style="list-style-type: none"> System can be a multiple-use device capable of controlling properly equipped scrapers (self-propelled or pull), dozers, graders, pavers (asphalt or concrete) pavement profilers, and milling machines. Trimmer controls: Fore and Aft, Left to Right Planes, Steering Control steering, elevation, cross-slope, long-slope on trimmers and concrete pavers Control elevation and cross-slope on asphalt pavers Control asphalt pavers to a tolerance of 1.5/100ths of a foot using both laser/GPS and GPS only. 	<ul style="list-style-type: none"> Cut-fill sections automatically calculated in the field, no trying to fit tins to existing. Actual vertical and horizontal curvature. Spirals curves and tangents (no Tins). Staking file is same as machine control file. As-Built made while grading, super elevation curves constructed as designed. Design flexibility--software can update changes in original plan as project phases are completed (with remap of changed areas).
<ul style="list-style-type: none"> System can be customized to install onto and Interface with existing customer equipment for surveying, grading and paving. Quick disconnect hardware allows movement of mobile GPS system onto other equipment for precision machine control. 	<ul style="list-style-type: none"> Mapping feature allows user to modify topography data with data from plan, change cross section or line data, and record change for plan modification. Improve accuracy, build better jobs from inception.
<ul style="list-style-type: none"> GPS/RTK system available in portable configuration for mounting onto lightweight vehicle or pickup truck for surveying applications. 	<ul style="list-style-type: none"> Avoid mistakes from bad grade stakes. Get on and off jobs quicker.

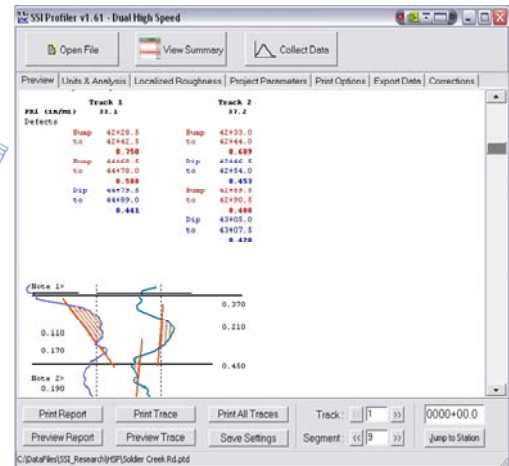
*Specifications subject to change.



GPS/RTK System Available as a Mobile Surveying Device



High Resolution 3D Topography Mapping (Vehicle Mounted)



Windows Application Software

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